Chemical and Biological Defense Information Analysis Center

CBIAC NEWSLETTER

Serving the CB Defense Community

Winter 1999 Vol.5 No.1

A U.S. Department of Defense Information Analysis Center (IAC) sponsored by the Defense Technical Information Center (DTIC)

PROJECT DO49

West Desert Test Center at Dugway Proving Ground, Utah

DO49 is the budget line for the Joint Chemical/Biological Contact Point and Test, a joint service program that conducts laboratory analyses, chamber studies, and field tests; and performs literature assessments of non-developmental, fielded, operational chemical and biological (CB) defense equipment, systems, and procedures.

The DoD CB Defense Program funds the program, with other test costs (troops and military equipment) funded by the customer. The Defense Threat Reduction Agency oversees the program for Service and CINC customers. D049 has been operated by U.S. Army Dugway Proving Ground (DPG), Utah, since 1973.

The program is a valuable asset to the Joint Services for assessment of capabilities, development, and validation of doctrine, policy, and procedures for conducting warfighting operations in a CB contaminated environment. Also, DO49 can provide valuable user input and feedback into the DoD research, development, test, and evaluation (RDT&E) program cycle.

In addition, DO49 serves as the DoD joint contact point for CB defense test data and technical reports - and publishes and maintains the 21 volumes of the CB Technical Data Source Book. The West Desert Technical Information Center (WDTIC) is the DO49 repository housing more than 70,000 CB related documents.

DO49 is coordinated with the Unified and Specified Commanders in Chief (CINCs) and the Joint Services through the Office of the Joint Staff (J-5) and the Services through the Joint Service Integration Group (JSIG). The CINC and Service representatives identify, approve, and prioritize requirements to be satisfied under the DO49 program.

Photo: U.S. Army photographer, Dugway Proving Ground

U.S. Air Force (USAF) personnel in Mission Oriented Protective Posture (MOPP) gear take samples from the cargo bay of the C-141 aircraft after the two-hour flight phase of the test.

The program's annual planning cycle includes a call for new operational evaluation and analysis requirements; revalidation of existing requirements not yet satisfied; prioritizing requirements; updating and developing the six-year program plan; obtaining review, coordination, and approval of the proposed six-year plan by the CINCs and Services; and executing the approved program.

DO49 has conducted non-developmental tests on land, in the air, and at sea - evaluating DoD weapons systems and CB defense equipment. All services have participated in the project, and more than 330 reports have been published.

See **"Project DO49"**

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ON THE INSIDE

CB NEWS EXCERPTS

The CBIAC has compiled a list of related CB news articles and taken excerpts from them to create brief overviews. The CBIAC does not provide secondary distribution of articles, but we can provide directions on where to find an article of interest. For further information, contact Mary Frances Tracy by E-mail tracymf@battelle.org or telephone (410) 612-6417.

On alert against the bio agents: Tactical biological-agent detection approaches reality
Mark Hewish
Jane's International Defense Review
November 1998
The detection of biological warfare (BW) agents has poised devilish problems for armed forces around the world. The present BW detection equipment is bulky, expensive, time-consuming to operate and, at times, not extremely sensitive. This article provides the latest technology in BW detection. Several areas of research are highlighted, for example: 1) research conducted between the U.S. Army Research Laboratory and New Mexico State and Yale Universities demonstrating the ability of a prototype aerosol fluorescence spectrum analyzer to capture spectra of single airborne biological particles 3-15 micrometers in diameter; 2) Science & Technology Corp along with the U.S. National Institutes of Health has adapted conventional assays based on antibodies and dyes to determine within 5 minutes the presence of militarily important viruses, toxins, and bacteria; 3) New Horizons Diagnostics Corp (NDH) has developed detection of pathogens including botulism toxin, anthrax, tularemia, and ricin with the aid of gold membrane immunoassay tests; 4) Using the refractive index of chemical and biological weapons, Texas Instruments has developed a handheld surface plasmon resonance (SPR) sensor for detection; 5) Defense Advanced Research Projects Agency (DARPA) has launched its Microfluidic Molecular Systems (MicroFlumes) program with the desired outcome of developing a single programmable machine that performs several hundred fluid-based process sequences to allow for detection (several corporations and universities have various approaches defined). Several other BW detection technologies are explored in this article.

"Universal" gel disarms weapons threat
http://ci.mond.org/9820/982002.html
October 19, 1998
Lynntech, a Texas-based company, has developed a gel to be used as a "universal" decontaminant for chemical and biological weapons. Lynntech's gel contains a mixture of hydrogen peroxide and then a mix of three potassium salts produced by DuPont and marketed as Oxone. These oxidents are mixed with iron sulphate immediately before spraying onto a contaminated area. The reaction between the peroxide and iron form highly reactive hydroxyl radicals. Testing with chemical agents will be conducted in Spring 1999; however, testing has been conducted on chemical weapon surrogates. These tests show the gel converting all three major groups of agents into harmless by-products. Bacterial spores are basically eradicated within minutes.

Weapons of Mass Destruction Response Team Locations Announced
http://www.defenselink.mil/news/Oct1998/b10011998_bt512-98.html
October 1, 1998
In a news release, Secretary of Defense William S. Cohen announced the locations of the 10 National Guard Rapid Assessment and Initial Detection, or RAID, teams. The teams will assist the emergency first responders, as well as, responding to state or federal government involved with an actual or suspected weapons of mass destruction (WMD) attack. The new 22-member full-time National Guard teams will be in the following locations: Los Alamitos, CA; Aurora, CO; Marietta, GA; Peoria, IL; Natick, MA; Fort Leonard Wood, MO; Scotia, NY; Fort Indiantown Gap, PA; Austin, TX; and Tacoma, WA.

Navy Researchers Reach Milestone in Developing DNA Vaccine
News Release from Public Affairs for the Office of the Assistant Secretary of Defense
October 15, 1998
A Navy-led team of researchers has successfully tested a DNA vaccine in healthy humans, a significant milestone in medicine's fight against many deadly diseases. DNA vaccines have the potential to prevent a wide variety of the most common infectious diseases, such as malaria, AIDS, dengue fever, and tuberculosis; highly fatal diseases, such as Ebola and Lassa fever; biological warfare threats; and cancer. The team headed by Navy CAPT. Stephen Hoffman, a physician, is based at the Naval Medical Research Center in Bethesda, MD. An article about Hoffman's study is in the Oct 16 issue of Science magazine. Additional information can be obtained by contacting Lt. Jensin Sommer and Ms. Doris Ryan at the Navy's Bureau of Medicine and Surgery at (202) 762-3222.

APG mustard agent contract award
Shani A. Brown
The Aegis
October 7, 1998
The U. S. Army has awarded a $306 million contract to Bechtel National Inc. for the construction of a disposal facility to destroy the 1,623 tons of bulk mustard agent stored at the Edgewood Area of Aberdeen Proving Ground, MD. Bechtel will be the responsible organization for the design completion, construction, equipment procurement and installation, operation and closure of the facility. According to Kathy DeWeese, public affairs officer for the Aberdeen Chemical Agent Disposal Facility, the mustard will be disposed in three steps. The first step will be the draining of the mustard agent from the storage containers. Following cleaning with high pressure hot water, the containers will be shipped to the Army's steel recycling center. The final step is the mustard agent neutralization. The neutralization process consists of mixing the liquid mustard agent in a tank with hot water thus forming a chemical reaction that produces a biodegradable product consisting of water, thiodiglycol and hydrochloric acid. Then the product is mixed with sodium hydroxide and sent to a biodegradation facility for mixing with ordinary sewer bacteria. The remaining product is carbon dioxide and solids that will be disposed of in a designated landfill. Ms. DeWeese stated, "It's important for people to know that the remaining liquid waste will be 98 percent water and 2 percent salt. Also before the biodegradable product is sent to biodegradation, it is tested to make sure ***no*** agent is present." Ms. DeWeese continued by stating the timetable for building completion is March 2002. She said, "We are on strict timelines. The disposal has to be completed by October 2004 and the facility has to be cleaned, dismantled and disposed of by November 2005. Once the stockpiles are disposed of, the building has to be destroyed."

MODELING THE EFFECTS OF RESPIRATOR MASK DESIGN ON WEARER PERFORMANCE: PHASE I CONCEPT/INITIAL DEVELOPMENT

The U.S. Army Edgewood Chemical Biological Center (ECBC), through CBIAC Technical Area Task (TAT) 196, is developing an engineering tool that allows mask designers to relate physical mask design parameters (MDPs) to their influences on human performance. The tool, called the Respirator Encumbrance Model (REM), will be used to predict the performance of individuals wearing respirators based on the design characteristics of the mask and the requirements of selected military tasks. This article details progress made during Phase I of the project and briefly describes Phase II work in progress.

PHASE I

Identifying a Need

The primary respirator design focus is to maximize wearer protection from airborne contaminants while minimizing the design's impact on user performance. While design approaches for increased protection are well researched and documented, there is currently no easy way to incorporate human performance information into the design process. For this reason, ECBC initiated the development of this engineering design tool to minimize much of the guesswork, cost, and hours currently expended determining the effects of new mask designs on wearer operational performance.

Information Acquisition

An extensive review of protective equipment design information was undertaken to identify the relationship between respirator mask characteristics and human performance. Information sources were assessed for relevancy based on (1) applicability to the REM project (e.g., sources documenting the degraded vision of soldiers wearing masks were rated high while sources discussing the effects of mask wear on soldier's sleep were rated low) and (2) type of data presented (e.g., sources containing quantitative test data or derived performance algorithms were rated high and sources containing qualitative data that could not be used to develop performance algorithms were rated low). All relevant resources were subsequently entered into a bibliographic database.

NIOSH, OSHA, and commercial sources were also contacted. Results indicated a heavy emphasis on the protection levels required in various environments as well as issues of filtration efficiency and prevention of medical complications.

Developing the REM Database Structure

Following bibliographic database development, a high-level schematic of the REM was created to map the potential flow of model information. (See Figure 1).

See **"REM Database Structure"**

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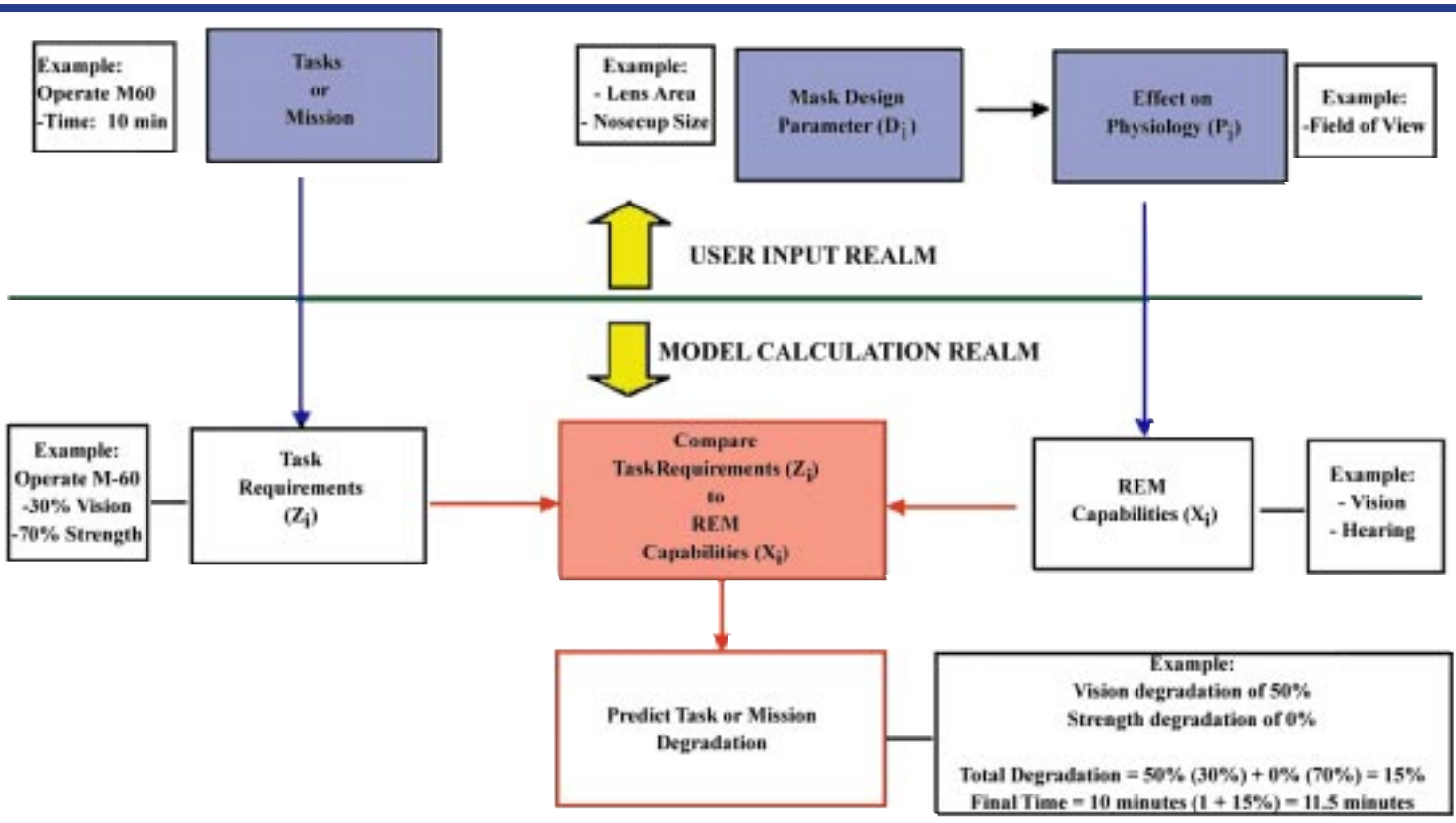

Figure 1: Schematic of Model Concept and Operation

CONTRACT AWARDS

1. Construction, Operation, & Closure at the Aberdeen Chemical Agent Disposal Facility
Bechtel National Inc.
San Francisco, CA
$305,589,159. October 2, 1998
By U.S. Army Armament, Munitions & Chemical Command

2. Specialized Radio System Conversion Equipment for Umatilla Chemical Depot Warning System
Safety and Emergency Security Systems
6527 NE 192nd Street
Seattle, WA 98155
$76,133. October 2, 1998
By FEMA

3. Nuclear, Biological, Chemical (NBC) Filters
Hunter Protection Systems
616 Marsat Court
Chula Vista, CA 91911-4646
$155,844. October 5, 1998
By Fleet & Industrial Supply Center

4. Chemical Protective Gloves
Guardian Manufacturing Co.
302 Conwell Avenue
Willard, Ohio 44890
$40,095. October 6, 1998
By Defense Personnel Support Center

5. Logistics Support for Cooperative Threat Reduction Projects
Raytheon Systems Co.
$81,000,000. October 1998
By Defense Special Weapons Agency

6. Unsymmetrical Dimethyl Hydrazine (UDMH) Disposition System Support Infrastructure
Cordant Technologies
Thiokol Corp.
Defense & Vehicle Division
Brigham City, UT
$10,375,991.
By Defense Threat Reduction Agency

7. Counter-Terrorism Technology Study
Research Associates for Defense Conversion, Inc.
10002 Hillside Terrace
Marcy, NY
$164,430. October 16, 1998
By AFMC

8. Outsert Lens, Clear
Mxl Industries Inc.
1764 Rohrerstown Road
Lancaster, PA 17601-2328
$121,306. October 16, 1998
By Defense General Supply Center - Richmond

9. Cold Weather Woodland Camouflage Field Coats
Golden Mfg. Company, Inc.
Golden, MS
$14,394,000. October 27, 1998
By Defense Supply Center - Philadelphia, PA

10. Life Support Equipment
Scott Aviation
225 Erie Street
Lancaster, NY 14086-9502
$73,927. October 29, 1998
By DSCC - Columbus

11. Supply of ComboPen Auto-Injectors
STI International Ltd.
(Subsidiary of Meridian Medical Technologies, Inc.)
United Kingdom
$2,500,000. November 4, 1998
By U.K. Ministry of Defense

12. Chemical Detector Kit
Bachrach, Inc.
625 Alpha Drive
Allegheny County
Pittsburgh, PA 15238
$66,186. November 27, 1998
By Defense General Supply Center

13. Chemical Filters
Hunter Protective Systems
616 Marsat Court
Chula Vista, CA 91911-4646
December 2, 1998
By Armament, Munitions and Chemical Command

14. Filters
Hunter Protection Systems
616 Marsat Court
Chula Vista, CA 91911-4646
December 7, 1998
By U.S. Army Armament and Chemical Acquisition and Logistics Activity

15. Hand-held, Battery Operated Device for Rapid Gene Detection of Multiple Biological Agents
Andcare, Inc.
2810 Meridian Parkway
Suite 152
Durham, NC 27713
$70,000. December 23, 1998
By USAMRAA

PEGEM VERSION 3.0 RELEASE

The United States Army Space and Missile Defense Command announces software release of the Post-Engagement Ground Effects Model (PEGEM) version 3.0 first quarter 1999. PEGEM version 3.0 includes all capabilities within the current version 2.1, PLUS:

- Enhanced user friendliness via new Graphical User Interface (GUI)
- Unitary chemical warhead modeling from ground level to exoatmospheric altitudes
- Cruise missile/UAV capability
- Addition of model to handle non-liquid debris
- Substantial increase in threat definitions, designs, adaptability
- Option to utilize Hazard Prediction and Assessment Capability (HPAC) for transport and dispersion
- Standard files and scenarios to facilitate analysis

PEGEM is developed by MEVATEC Corporation under the authority and direction of the USASMDC Weapons Directorate-Lethality Division (TC-WL) and provides high explosive chemical and biological weapon ground hazard assessment for multiple threat types and times-of-interest. PEGEM code end-to-end calculations as well as parametric analysis capabilities can be applied to offensive deployments and intercepts. Model outputs consist of deposition, dosage, and fragment kinetic energy grids, as well as instantaneous concentrations and casualty grids at user-specified times-of-interest on assets-of-interest.

To request PEGEM 3.0, contact:

Government Program Engineer
Dr. Julius Lilly
U.S. Army Space and Missile Defense Command
Attn: SMDC-TC-WL
P.O. Box 1500
Huntsville, AL 35807
Phone: 256-955-3059
Fax: 256-955-3641
E-mail: lillyj@smdc.army.mil

MEVATEC Program Manager
Mr. William K. Moore
MEVATEC Corporation
1525 Perimeter Parkway, Suite 500
Huntsville, AL 35806
Phone: 256-890-8000
Fax: 256-890-0000
E-mail: bill_moore@mevatec.com

CBIAC ACTIVITIES

Current Awareness and Promotions

• Dr. Jim King participated in the U.S. Army Medical Research and Materiel Command Acquisition Conferences on Oct. 26 and 27, 1998 in Frederick, MD. The conference focused on life-cycle management issues for drugs, devices, biologics, and other medical systems, and included medical chemical and biological defense products. The conference featured speakers from SARDA, Army Research Office, Office of Small and Disadvantaged Business - Office of the Deputy Undersecretary of Defense, the Assistant Secretary of the Army for Procurement, and numerous others. The CBIAC was highlighted to this audience as an important information source during the DTIC break out session. Dr. King presented a brief overview.

• Ms. Janice Rhodes led a CBIAC team that met with the Department of Justice's (DOJ's) Office of Justice Programs (OJP), Office for State and Local Domestic Preparedness Support (OSLDPS) at their offices in Washington DC on Oct. 23, 1998. Ms. Rhodes' team briefed the CBIAC's mission, products, services, and Chemical and Biological Defense technical support and training capabilities, specifically highlighting current efforts in Domestic Preparedness. This meeting introduced senior DOJ personnel to the wealth of resources, products, technical support, and other services available through the CBIAC.

• The CBIAC was well represented at the DTIC '98 Annual Users Meeting and Training Conference, held Nov. 2-5, 1998 in Arlington, Virginia. CBIAC staff, including Ms. Jeanne Rosser and Ms. Barbara Hoffman, operated a popular booth in the display area. Mr. Don McGonigle presented the talk *World Wide Web Enabled IAC Products*, while Ms. Katie Handal of the CBIAC's Washington, DC Satellite Operation represented new DTIC users in another forum and presented on DTIC Products at Battelle Memorial Institute. Mr. Ron Evans and Dr. Jim King were also in attendance.

• Ms. Jeanne Rosser was elected to the DTIC Users Council for a two year term during an election held in conjunction with the DTIC '98 Annual Users Meeting and Training Conference. The Users Council articulates the interests of DTIC users, facilitates activities that benefits users, expedites the flow of information between users and DTIC, and makes recommendations to DTIC on behalf of users.

• On Nov. 10, 1998, Ms. Judith Hermann attended the open house hosted by the Army's Product Manager for Alternative Technologies and Approaches. Held at the Chemical Demilitarization Training Facility in the Edgewood Area of Aberdeen Proving Ground, the open house provided attendees with information about the disposal of the mustard agent stockpile stored at the Edgewood Chemical Activity, and included a tour of the Chemical Agent Storage Yard (CASY).

• The CBIAC will be attending and staffing an exhibit booth at the DTIC DoD Annual IAC Awareness Conference, Information in the new Millenium, to be held Feb.17-18, 1999 in Fort Belvoir, Virginia.

Inquiry and Referral Services

The CBIAC is pleased to announce that Ms. Jeanne Rosser has been named the new manager of the CBIAC Inquiry and Referral Services. Ms. Rosser has been with the CBIAC since its inception, and has been responsible for the data acquisition and processing over the years, along with all the "other duties as assigned." Congratulations, Jeanne!

Inquiries continue to cover all CBIAC scope categories. Last quarter, the largest numbers of inquiries were in the areas of *NBC Survivability* and *Chemical and Physical Properties*.

Products

The CBIAC has several new informational products available as of Jan 1, 1999. The latest Critical Reviews released are *Demilitarization Technologies for Biological Toxins, Critical Review of Surface Sampling Technologies for Volatilizing Liquid Chemical Agents,* and *Critical Review of Non-Lethal Grenade Technologies and Lethality Evaluation Criteria*. The newest State-of-the-Art Reports include *Technical Approach Options for Indoor Air Modeling, CINC Information Tool, Disaster Preparedness Operation Specialist (DPO) Computer Aided Instruction, CBR-D Computer Aided Instruction, State-of-the-Art Report on the Australia Group Chemicals.* See the **FY99 Products Catalog Update and Order Form** in the center pull-out section of this newsletter for descriptions and prices.

Check out the newest feature on the CBIAC home page, ***Current Headlines***. A custom-tailored CB defense keyword strategy is submitted to the Infoseek search engine at the time the ***Current Headlines*** feature is selected. The search provides the reader with links to 100 of the most recent CB news articles available on the Internet within a one-month period.

Technical Area Tasks

Since the last newsletter, two new tasks were awarded, effort was added to 12 ongoing tasks, and six tasks have been completed. As of 31 December 1998, a total of 193 TATs have been awarded.

For further information on a CBIAC TAT, contact Judith Shetterly CBIAC TAT Administrator. In order for us to help you most efficiently, please furnish your name, Government Contract Number (if any), the reason you are requesting the information, and your organization's address and telephone number. This information is needed to obtain the release of information from the TAT sponsor.

Completed:

Task	Description/Sponsor
41	Develop and Evaluate Polyclonal Antibiodies USA/SBCCOM
43	Develop and Evaluate Monoclonal Antibodies USA/SBCCOM
184	Archive/Database CW Field Test Data USA/ECBC
188	Naval Construction Training Center Support USN/NCTC
227	NBC JSIG Technical Support USA/CMLS
244	Validation of CB Filter Performance Procedures USA/ECBC

***See* "CBIAC Activities"**

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CALENDAR OF EVENTS

The CBIAC maintains a Calendar of Events highlighting conferences, symposia, meetings, exhibitions and workshops of interest to the CB community in every issue of our newsletter and on the CBIAC homepage at http://www.cbiac.apgea.army.mil. *We invite CBIAC users to submit information on various events to Judith A. Hermann (*hermannj@battelle.org*) at 410-612-6421. Due to space limitations, the CBIAC will accept submissions on a first-come, first-served basis and reserves the right to reject submissions.*

1999 MEETINGS

February 17-18
IAC Awareness Conference: Information in the New Millennium
Delta Orlando Resort
Orlando, FL
Contact: The Defense Modeling, Simulation and Tactical Technology Information Analysis Center (DMSTTIAC)
IIT Research Institute
12443 Research parkway
Suite 302
Orlando, FL 32826
POC: Mr. John Davis, DMSTTIAC
Tel: (407) 282-6400
Email: jdavis@orlando.iitri.com
http://dmsttiac.hq.iitri.com/iac/index.html

February 23-24
DTIC Southern Regional Users Meeting and Training Conference
DeFlorez Building
Orlando, FL
Host: U.S. Army Simulation, Training and Instrumentation Command (STRICOM)
Defense Technical Information Center (DTIC)
8725 John J. Kingman Road, Suite 0944
Ft. Belvoir, VA 22060-6218
DTIC POC: Ms. Julia Foscue
Tel: (703) 767-8236 or DSN 427-8236
Fax: (703) 767-8228 or DSN 427-8228
E-mail: jfoscue@dtic.mil
http://www.dtic.mil/dtic/regconf/southern.html

March 1-3
MESM '99
The First Middle East Workshop on Simulation and Modeling
University of Jordan
Amman, Jordan
Organised/Sponsored by :
De Montfort University, Leicester
The University of Jordan, Faculty of Engineering
POC: Philippe Geril
The Society for Computer Simulation International
European Simulation Office
University of Ghent
Coupure Links 653
B-9000 Ghent, Belgium
Tel: ++32 9 2337790; Fax: ++32 9 2234941
E-mail: Philippe.Geril@rug.ac.be
http://hobbes.rug.ac.be/~scs/conf/mideast99/index.html

March 7-12
PITTCON®'99
Orange County Convention Center
Orlando, FL
Contact: The Pittsburgh Conference
300 Penn Center Blvd., Suite 332
Pittsburgh, PA 15235-5503
Tel: (412) 825-3220 or (800)825-3221
Fax: (412) 825-3224
E-mail: reg@pittcon.org
http://www.pittcon.org/index.html

March 9-10
WMD & Domestic Preparedness: Integrating First Response & Medical Management
Washington, DC
Sponsor: Defense Week
King Publishing Group,
King Communications Group, Inc.
627 National Press Building
529 14th Street, Suite 627
Washington, DC 20045
Tel: 202-638-4260; Fax: 202-662-9719
http://www.kingpublishing.com/conferences/h-3.htm

March 14-18
Idex '99: The International Defence Exhibition
Abu Dhabi International Exhibition Centre (ADIEC)
Abu Dhabi, U.A.E.
Organizer: The Military Committee for International Defence Exhibitions & Conferences (CODEX)
Tel : +971-2-335820; Fax : + 971-2-340680
http://www.idex-uae.com/index99.htm

March 15
TECOM Advance Planning Briefing for Industry (APBI) '99
Turf Valley Resort and Conference Center
Ellicott City, MD

Sponsor: U.S. Army Test & Evaluation Command (TECOM)
Directorate for Technical Mission
Administrative Support: TRI-S Incorporated
ATTN: TTS '99
323 South Union Avenue
Havre de Grace, MD 21078
POC: Ms. Annemarie Howard
Tel: (410) 273-9414; Fax: (410) 273-7470
E-mail: tris@tris.com
http://www.tecom.army.mil/apbi/1999/apbi99in.html

March 16-18
MILCON '99: Defence Solutions for the 21st Century
Abu Dhabi International Exhibition Centre (ADIEC)
Abu Dhabi, U.A.E.
Organizers: GHQ; U.A.E. Armed Forces;
The Military Committee For International Defence Exhibitions and Conferences
Co-organizer: Jane's Information Group
Contact: MILCON '99 Secretariat
PO Box 309-40
Abu Dhabi, U.A.E.
Tel: +971 2 336 864; Fax: +971 2 332 393

March 16-18
TECOM Test Technology Symposium '99
"Enabling Technologies for Affordable Testing"
Turf Valley Resort and Conference Center
Ellicott City, MD

Sponsor: U.S. Army Test & Evaluation Command (TECOM)
Directorate for Technical Mission
Administrative Support: TRI-S Incorporated
ATTN: TTS '99
323 South Union Avenue
Havre de Grace, MD 21078
POC: Ms. Annemarie Howard
Tel: (410) 273-9414; Fax: (410) 273-7470
E-mail: tris@tris.com
http://www.tecom.army.mil/tts/1999/index.html

March 29 – April 1
25th Environmental Symposium & Exhibition: Privatization/Outsourcing of DoD Environmental Operations: Who? What? When? Where? and Why?
Colorado Convention Center
Denver, CO
Sponsor: Environmental Systems Division, NDIA
Deputy Under Secretary of Defense, Environmental Security and Assistant Chief of Staff for Installations Management, Department of the Army
National Defense Industrial Association (NDIA)
2111 Wilson Boulevard, Suite 400
Arlington, VA 22201-3061
Meeting Reference #: 944
POC: Jean Kohlmeyer
Tel: (703) 247-2574; Fax: (703) 522-1885
E-mail: jkohlmeyer@ndia.org
http://www.ndia.org/events/brochure/944/944.htm

March 29 - April 2
18th Annual Course on Modeling, Simulation, and Gaming of Warfare
Paul Weber Space Science and Technology Building
Georgia Institute of Technology
Atlanta, GA
Contact: Georgia Institute of Technology
Atlanta, GA USA 30332
POC: Mr. Terry Hilderbrand
Tel: (404) 894-9063; Fax: (404) 894-9081
E-mail: terry.hilderbrand@gtri.gatech.edu
http://www.msosa.dmso.mil/mscalendar/default.asp?fctn=evedetails&itemid=201

April 5-9
13th International Symposium on Aerospace/Defense Sensing, Simulation, and Controls
Marriott World Center Resort and Convention Center
Orlando, FL
Contact: SPIE Communications
P.O. Box 10
Bellingham, WA USA 98227-0010
Tel: (360) 676-3290; Fax: (360) 647-1445
E-mail: spie@spie.org
http://www.spie.org/web/meetings/calls/or99/
http://www.msosa.dmso.mil/mscalendar/default.asp?fctn=evedetails&itemid=541

April 11-15
The Advanced Simulation Technologies Conference (ASTC '99)
Hyatt Islandia Hotel
San Diego, CA
Contact: Society for Computer Simulation International (SCS)
P. O. Box 17900
San Diego, California 92177-7900
Tel: (619) 277-3888; Fax: (619) 277-3930
E-mail: info@scs.org
http://www.scs.org/confernc/astc99/astc99cfp.html

April 12-14
ElectroMed99:
First International Symposium on Nonthermal Medical Biological Treatments Using Electromagnetic Fields and Ionized Gases
Waterside Convention Center
Norfolk, Virginia
Sponsors: Air Force Office of Scientific Research,
Old Dominion University
The College of William and Mary
ElectroMed99
Ms. Marcie Blanchard
KDH231- Old Dominion University
Norfolk, Virginia 23529
POC: Marcie Blanchard
Tel: (757) 647-6497; Fax: (757) 588-3527
E-mail: electromed99@ece.odu.edu
http://www.ece.odu.edu/~emed99

April 18-23
Gordon Research Conference on
Barrier Function of Mammalian Skin
Il Ciocco
Barga, Italy
Contact: Gordon Research Conferences
University of Rhode Island
P.O. Box 984
West Kingston, Rhode Island 02892-0984
Tel: (401) 783-4011; Fax: (401) 783-7644
http://www.grc.uri.edu/programs/1999/barrier.htm

April 20-22
BioMedSim'99
1st Conference on Modeling and Simulation In Biology, Medicine and Biomedical Engineering
ESIEE
Noisy-le-Grand, France
Contact: Groupe ESIEE
Cite Descartes, BP 99
2 Bd. Blaise Pascal
F. 93162 Noisy le Grand CEDEX
FRANCE
POC: Prof. Y. Hamam
Tel : 01 45 92 65 00; Fax : 33-1-45 92 66 99
E-mail: hamam@esiee.fr
http://www.esiee.fr/~hamamy/bioconf.html

***See* "Calendar of Events"**

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Calendar of Events

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April 26-29
Building Distributed Simulation Applications
Distributed Simulation Technology, Inc.
Altamonte Springs, FL
Sponsor: Distributed Simulation Technology, Inc. (DiSTI)
777 E. Altamonte Drive, Suite 204
Altamonte Springs, FL USA 32701
Tel: (407) 339-8288; Fax: (407) 339-8202
POC: DiSTI Registrar
E-mail: registra@simulation.com
http://www.simulation.com/training/dis/engineer.html

May 1-4
PADS'99: 13th Workshop on Parallel and Distributed Simulation
Part of the Federated Computing Research Conference FCRC '99
Atlanta Hilton & Towers
Atlanta, Georgia
Sponsors: ACM Special Interest Group on Simulation (SIGSIM)
IEEE Computer Society Technical Committee on Simulation (IEEE-TCSIM)
Society for Computer Simulation (SCS)
E-mail: pads99@dcs.exeter.ac.uk
http://www.dcs.ex.ac.uk/~pads99/

May 3-6
DoD Force Protection Equipment Demonstration II (FPED II)
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Quantico, VA
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Office of the Under Secretary of Defense For Acquisition and Technology (OUSD A&T)
Department of Justice (DOJ)
Joint Non-Lethal Weapons Directorate (JNLWD)
Coordinators: U.S. Army Product Manager-Physical Security Equipment (PM-PSE)
POC: Mr. Mike Toscano
Tel: (703) 697-0854 or (703) 697-0638
Fax: (703) 697-7029
E-mail: toscanom@acq.osd.mil
http://www.csc.com/fped/

May 4-6
Sensors Expo 1999
Baltimore Convention Center
Baltimore, MD
Sponsor: Sensors®
Advanstar Communications
POC: Joel Dunkel
Tel: (203) 882-1300 ext. 160
E-mail: jdunkel@advanstar.com
http://www.sensorsexpo.com/contacts.htm

June 14-18
Scientific Conference on Obscuration and Aerosol Research
Edgewood Area Conference Center
Aberdeen Proving Ground, MD
Sponsor: U.S. Army Edgewood Chemical & Biological Center, Aerosol Sciences Team
Coordinator: Battelle Edgewood Operations
2012 Tollgate Road, Suite 206
Bel Air, MD 21015
POC: Amy Coverstone
Tel: (410) 569-0200; Fax: (410) 569-0588
E-mail: coverstonea@battelle.org

Canadian R&D in Personal CB Protection

Development and manufacture of chemical and biological (CB) protective equipment in Canada began in 1936. With World War II on the horizon, Canada moved to secure a supply of respirators by establishing a small plant in Ottawa. This capability expanded during the Cold War into a thriving industry producing the full range of CB clothing and equipment. Much of the R&D which supported the Canadian CB industry was carried out at the Defence Research Establishment Ottawa (DREO) in Ontario. Success stories include the C4 mask, the C7 plastic canister and the Penetrant Protective Charcoal. These and others products of close cooperation between DREO and industry are now in service with the Canadian Forces (CF) and have been sold to countries around the world.

Today R&D in CB protection is carried out at the Defence Research Establishment Suffield (DRES) where the program is focused on the most critical requirements of the CF. One of these is the need for a hot weather garment and, to this end, DRES has evaluated about 40 lightweight barrier fabrics (both commercially available and developmental) using the procedures and equipment documented in the NATO Triptych D101. The best of these fabrics were used to make prototype garments which were further evaluated in the Chemical Vapour Penetration Facility at the Royal Military College, Kingston, Ontario. This facility exposes human volunteers under very controlled conditions to methyl salicylate and measures the vapour penetration of simulant at the skin surface. These standardised procedures have been used to investigate both overgarment and undergarment concepts. The prototype systems have also been extensively studied during physiological and user field trials. The new Canadian overgarment for hot weather is ready to go into production and is scheduled to be in service in the year 2000. A CB undergarment has been developed for the RCMP who propose wearing it under their bomb disposal suit in incidents involving CB terrorism. Another program area is the development of a new CB glove. A reduction in the requirement for durability (from 24 h to 12 h) has allowed DRES to use the latest moulding technology and adopt new materials. The design has also been improved by applying anthropometric and other human factors considerations. This technology is presently being transferred to industry and the new CB glove is expected to be in service with the CF in 2002.

The future thrust of the CB protection program will be a low burden, general purpose suit that has longer wear characteristics than the hot weather garment described above. This project will build upon materials R&D already completed at DRES and will produce systems capable of being integrated with other forms of personal protection (e.g. integrating the CB respirator with other items of head protection). This research will be closely aligned with the IPCE (integrated protective clothing and equipment) project led by the Director Soldier System Project Management in National Defence Headquarters, Ottawa.

Despite reductions in personnel and funding, the Canadian R&D program in CB protection is alive and well at DRES and is still able to transfer valuable technology to industry. However, the emphasis today is on partnerships in which industry shares the cost of projects of mutual interest. The Canadian CB industry seems to thrive under this arrangement and has an excellent range of products which are finding new markets in the counter terrorism field. Those interested in gaining access to expertise and facilities at DRES should contact Mr. Clement Laforce, Head of Business Development (403-544-4733; e-mail: Clement.Laforce@dres.dnd.ca)

SELECTED INQUIRY RESPONSES

This section of the newsletter contains selections of recent technical inquiries and responses on subjects we feel are of interest to our readers. The information presented has been edited to conserve space. If you would like further detail, contact Mary Frances Tracy by E-mail tracymf@battelle.org or telephone (410) 612-6417. Please provide the reference number if available.

Q: What are some of the new and emerging technologies for biological agent detection?

A: Sensitive membrane antigen rapid test (SMART) immunoassay, reagent tag biosensing, electroluminesence, light addressable potentiometric sensor (LAPS) immunoassay, fluorescent evanescent wave biosensing, latex particle agglutination/ light scattering and surface plasmon resonance.

Web sites dealing with biological agent detection include:

http://www.pnl.gov/dcbpweb/index.htm
Pacific Northwest National Laboratory, Detection and Characterization of Biological Pathogens

http://www.brooks.af.mil/HSC/YA/yaccont.htm
Brooks Airforce Base Contamination Avoidance Commodity Area.

Q: Where can I find information on medical chemical and biological defense training?

A: A course on the medical management of chemical and biological agent casualties is conducted jointly by the U.S. Army Medical Research Institute of Chemical Defense at Aberdeen Proving Ground, MD and by the U.S. Army Research Institute of Infectious Diseases at Fort Detrick, MD. Other information on this topic can be found on the U.S. Army Surgeon General's medical NBC web site. Links to all of these sites can be found on the CBIAC web site (http://www.cbiac.apgea.army.mil) under the Medical - Chemical and Biological Defense section of the CB Internet Directory. The NBC Sciences Branch, U.S. Army Medical Department Center and School (AMEDDC&S) also hosts a Medical Nuclear, Biological, and Chemical (NBC) Readiness Course. Information on this course can be found at: (http://www.nbc-med.org/training2/NBC_Readiness/NBC_Readiness.html).

Project DO49

Continued from page 1

One recent DO49 test, the Cargo Aircraft Contamination Control (CACC) Test, could affect the way the military handles cargo in a CB contaminated environment. This joint-service field test - the first of its kind - gave a critical look at how Air Mobility Command (AMC) plans to conduct operations in a chemically threatened region.

The project, which involved approximately 70 U.S. Air Force (USAF) personnel along with 40 workers from DPG, was voted as DO49's top priority for fiscal year 1998.

The purpose of the test was to validate recommended procedures for protecting aircrew, ground support, personnel, equipment, and cargo from chemical contamination, while reducing chemical contamination transfer and purging chemical vapors from a C-141 aircraft during flight. It also sought to validate the operational effectiveness of airwashing the exterior of an aircraft during flight and decontaminating ground support equipment, cargo, and the aircraft's interior.

AMC was tasked to incorporate lessons learned from the test into current USAF procedures and training programs. If validated, the test results will be disseminated to all AMC units - modifying and standardizing existing operational procedures.

When the appropriate procedures are validated, DoD can adopt them across Service lines for most cargo-handling operations.

Another project, the Air-Platform Interface Test, called for DO49 to validate current entry and exit procedures and issues regarding aircraft recovery, maintenance, refueling, and rearming.

One of the top priorities for FY00 is the Seaport of Debarkation (SPOD) Test, which will validate procedures and training methods for conducting port operations in a chemically contaminated environment.

Program Manager Paula Nicholson said, "DO49's main emphasis is assisting the individual warfighter in accomplishing his/her mission in a safe and confident manner."

Nicholson only sees DO49's role becoming more critical as the threat of CB terrorism at home and abroad continues to escalate.

For more information about the DO49 program contact:

Paula P. Nicholson, Program Manager
Joint Chemical/Biological Contact Point & Test Program Management Office
435-831-3816 or DSN 789-3816
nicholsn@dugway-emh3.army.mil

Photo: U.S. Army photographer, Dugway Proving Ground

Aircrew members donned personal protective coverings to avoid liquid agent exposure before walking through the contaminated area.

CBIAC Activities

Continued from page 5

Underway:

Task	Description/Sponsor
414	Technical Industrial Hygiene Support Services USA/ECBC

NEW ACQUISITIONS

The following acquisitions may be reviewed at the CBIAC. Further information on how to obtain or review any of the listed acquisitions is included for your convenience. If you would like further detail, please contact Richard M. Gilman by E-mail gilman@battelle.org or telephone (410) 612-6415. The CBIAC is not authorized to distribute duplicates of the listed acquisitions.

Chevrier, Marie L., et al. **Biological Weapons Proliferation: Reasons for Concern, Courses of Action.** Washington, D.C.: The Henry L. Stimson Center 1998, pp. 136.

"The proliferation and use of biological warfare agents is now widely recognized to be one of the most serious threats to national and regional security. Yet multilateral efforts to deal with this problem proceed at a snail's pace. This publication highlights ways to strengthen international norms against the development, production, possession, and use of biological weapons."

CB-104700.01
Henry L. Stimson Center
11 Dupont Circle, N.W.
Ninth Floor
Washington, D.C. 20036
(202) 223-5956

Covert, Norman. **The History of Ft. Detrick, Maryland. 3nd. ed.** Ft. Detrick, Frederick, MD: Headquarters, U.S. Army Garrison, Ft. Detrick, 1997.

This online history of Fort Detrick is a work in progress. As new information becomes available it is evaluated for incorporation into future updates. According to the current writer and compiler, historian Norman Covert: "The intent of this volume is to recount in historical perspective the achievements of Camp and Fort Detrick. This is far from comprehensive, but we hope it provides the reader information that will dispel rumor, enlighten and spark a sense of pride in what America and Fort Detrick have accomplished."

Online version is available on the internet at http://www.armymedicine.army.mil/detrick/history/index.htm

CB-106387
Headquarters, U.S. Army Garrison
Ft. Detrick, Frederick, MD 21702-5000
(301) 619-2018

Ranger, Robin, ed., with Jeremy Stocker & David Weincek (Rapporteurs). **Theatre Missile Defence.** Lancaster, U.K.: CDISS, 1998, pp. 164.

Eighteen British and American military and defense policy experts present their views On the critical issues associated with theatre missile defence.

CB-106697
ISBN: 1-86220-061-0
Centre for Defence and International Security Studies (CDISS)
Carmel College
Lancaster University
Lancaster LA1 4YL
United Kingdom
tel: 01524 594254
fax: 01524 594258

Tucker, Jonathan, ed. **Inspection Procedures for Compliance Monitoring of the Biological Weapons Convention.** Monterey, CA: Monterey Institute of International Studies, 1997, pp. 29.

The challenge facing those seeking to strengthen the compliance features of the BWC, ". . . is to craft a workable compliance regime that enhances deterrence and confidence while minimizing any adverse consequences for industrial competitiveness and national security." To explore such BWC compliance issues, 30 leading experts in this field participated in a workshop held at the Lawrence Livermore National Laboratory in December 1997. This publication explores the results of their deliberations.

CB-106694.01
Monterey Institute for International Studies
425 Van Buren Street
Monterey, CA 93940
(408) 647-3519

Leaving Government Service??

If you have documents related to Chemical Warfare/Chemical or Biological Defense in your working collection, consider donating them to the CBIAC. As the repository for CB defense information, documents unique to your area of expertise can be a valuable historical and/or technical resource to scientists' and engineers' continuing efforts in the CB defense arena.

For further information, contact:
Dr. James King at the CBIAC (kingj@battelle.org) or
Mr. Joseph D. Williams (Joseph.Williams@sbccom.apgea.army.mil), CBIAC COTR.

Highlight Your Chemical or Biological Defense Program in the CBIAC Newsletter!

The CBIAC Newsletter is a forum for the latest program updates, policy changes, and general Chemical and Biological Defense (CBD) information. We welcome unsolicited articles for inclusion in the newsletter.

Articles should be approximately 200 to 300 words in length. Graphics, and photographs greatly enhance the story presentation, and may be provided in electronic format (.bmp, .tiff, .gif, .jpeg). Hardcopies of photographs or "camera ready" art (clear, sharp lines) are also acceptable

Deadlines for submissions for each quarterly issue are listed below:

Winter issue: Dec. 1st
Spring issue: Mar. 1st
Summer issue: June 1st
Fall issue: Sept. 1st

Advance coordination is recommended, especially if you are interested in having your article appear in a particular issue.

Articles provided for the CBIAC Newsletter must be approved for public release prior to submission and are subject to the review and approval requirements established by our sponsor. The CBIAC reserves the right to reject submissions.

For further information, contact Mary Jo Waters, Newsletter Editor, at (410) 612-6418 or by E-mail at watersm@battelle.org.

REM Database Structure

Continued from page 3

The information flow was adapted from the Operational Requirement-based Casualty Assessment (ORCA) model developed for the U.S. Army Research Laboratory, Survivability and Lethality Analysis Directorate and the Crew Casualty Working Group of the Joint Technical Coordinating Groups for Munitions Effectiveness and Aircraft Survivability. The ORCA model provides a methodology for assessing operational capabilities of soldiers who have been injured by various munitions and theoretical chemical agent exposures. It was determined that the baseline architecture of the ORCA model could serve as a guide for REM development, thus allowing the REM to calculate performance degradation as a result of wearing variously configured respirator equipment.

Two lists are also important in the description of the model. The first is a set of MDPs that collectively define mask characteristics having a direct influence on human performance. Examples include such items as lens shape and area; voicemitter location; inlet and outlet valve area, shape, and material; and hood material and thickness.

The second list details psychological and physiological factors of human performance that may be influenced by respirator wear. The ORCA model was revisited to determine if its established list of human capabilities could be applied to the realm of respirator wear. Of the 24 capabilities listed in ORCA, 15 were believed to be directly relevant to the REM. In addition, five capabilities related to mask wear were believed to be missing and were subsequently added to create a list of 20 REM Capabilities. Sample REM Capabilities include inhalation and exhalation resistance, respirator dead space volume, thermal burden, and comfort.

Assumptions

As conceptualized, several assumptions will be applied to all the REM algorithms. First, it is assumed the wearer is a male soldier with no uncorrected pre-existing condition such as poor eyesight. Second, the selected tasks will be performed immediately upon donning the mask. Third, degradation in performance is attributed to mask wear and not to a breakdown in respiratory protection. Fourth, the most widely issued mask size is used for all measurements. It is also important to note that the REM initially refers only to the Military Occupational Specialty (MOS)11B category of infantry soldier tasks.

Implementation of the REM as a Microsoft Accesss® Application

Microsoft Access® 97 is the platform being used for development. The REM was designed to run in the Windows 95/NT 4.0 environments on a PC with a minimum of 16 MB of RAM and an SVGA Monitor (17", 1024x768 resolution). The user interface was accomplished by way of navigation forms. The focus was on the mask designer and as far as possible, the designer's vocabulary was used for interface development.

PHASE II

Phase II work has begun to implement a working REM by populating the established architecture with empirical data.

This phase involves processing the knowledge gathered into computer coded algorithms for predictions of performance. In addition, we will be expanding the task lists to include selected military occupations from the other services and refining the database structure and the user interface to streamline data entry requirements.

Questions or comments regarding the Respirator Encumbrance Model may be directed to David M. Caretti by E-Mail David.Caretti@sbccom.apgea.army.mil or telephone (410) 436-6699.

Authors:

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Kaushik (Kosh) Ghosh, Principle Research Scientist, Systems Analysis and Engineering Group, Battelle Memorial Institute, Columbus, OH.

Chemical and Biological Defense Information Analysis Center

CBIAC

Serving the CB Defense Community

The **CBIAC Newsletter** is a quarterly publication of the Chemical Warfare/Chemical and Biological Defense Information Analysis Center (CBIAC). The CBIAC is a Department of Defense (DoD) Information Analysis Center (IAC), administratively managed by the Defense Technical Information Center (DTIC) under the DoDIAC Program Office.

Government agencies and private industry under contract to the Department of Defense can contact the CBIAC for informational products and services. The CBIAC serves as the center for the acquisition, compilation, analysis and dissemination of information relevant to chemical warfare and chemical and biological defense technology.

The CBIAC is located in Building E3330, Aberdeen Proving Ground - Edgewood Area, Maryland 21010. For further assistance or information, visit or contact the CBIAC Monday through Friday from 8:00 a.m. to 4:00 p.m., EST:

Mailing Address: CBIAC
P.O. Box 196
Gunpowder Branch,
APG, MD 21010-0196

Tel: 410-676-9030 Fax: 410-676-9703
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URL: http://www.cbiac.apgea.army.mil/

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The Contracting Officer's Technical Representative for the CBIAC is Mr. Joseph D. Williams. He can be reached through his E-Mail address Joseph.Williams@sbccom.apgea.army.mil or at the following address:

CDR USA SBCCOM
Edgewood Chemical Biological Center
ATTN: AMSSB-RRT-OM (Joe Williams E3330)
5183 Blackhawk Road
Aberdeen Proving Ground, MD 21010-5424

1999 CBIAC User Survey

Help us to improve our services to the CB defense community by providing the information requested below.

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Thank you !!!

Please fill out our User Survey and mail it to:

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Demilitarization Technologies for Biological and Toxin Weapons

CBIAC Product Number: CR-98-08 **Product Category:** Critical Review **Media:** Paperback **Price:** $25.00
Distribution Limitation: U.S. Government Agencies Only **Classification:** Unclassified
Publication Date: September 1998 **Availability:** CBIAC
Description: This report provides the reader with a basic understanding of the history, principles, and procedures underlying the destruction (demilitarization) of biological and toxin weapons as discussed in the open literature. A survey of the open literature is presented to ascertain the current state of knowledge in this field. An extensive list of information resources is provided for those who wish to pursue the topic further.

The Year 2000 (Y2K) Millenium Bug A Chemical and Biological Defense Community Perspective

CBIAC Product Number: CR-98-07 **Product Category:** Critical Review **Media:** Paperback **Price:** $15.00
Distribution Limitation: Unlimited **Classification:** Unclassified
Publication Date: September 1998 **Availability:** CBIAC
Description: The Y2K problem is pervasive and may affect the CB defense community in several ways. Knowledge of the problem is essential in order to plan and implement actions to repair or replace hardware or software that may fail once the transition from December 31, 1999 to January 1, 2000 occurs. This CR provides information to aid both the DoD and its contractors in general terms, and provides specific references to the Y2K compliance status of various programs within the CB defense community.

Critical Review of Surface Sampling Technologies for Volatilizing Liquid Chemical Agents

CBIAC Product Number: CR-98-05 **Product Category:** Critical Review **Media:** Paperback **Price:** $25.00
Distribution Limitation: Unlimited **Classification:** Unclassified
Publication Date: April 1998 **Availability:** CBIAC
Description: This critical review supports the XM279 surface sampler development program. It identifies and describes surface sampling technologies and equipment that could aid the M22 Automatic Chemical Agent Alarm in detecting volatile liquid chemical warfare agents on surfaces. The CR presents a technical evaluation of six preliminary design concepts and discusses future development of volatilization technologies.

Critical Review of Non-Lethal Grenade Technologies and Lethality Evaluation Criteria

CBIAC Product Number: CR-98-04 **Product Category:** Critical Review **Media:** Paperback **Price:** $25.00
Distribution Limitation: Unlimited **Classification:** Unclassified
Publication Date: April 1998 **Availability:** CBIAC
Description: This critical review presents the results of a market investigation conducted to identify existing non-lethal technologies for integration into a 66 mm grenade for use with the Light Vehicle Obscuration Smoke System (LVOSS). This CR identifies and analyzes three specific non-lethal technologies and 12 existing non-lethal grenades. This report also identifies potential evaluation criteria for use in considering these technologies.

Technical Approach Options for Indoor Air Modeling

CBIAC Product Number: SOAR-98-09 **Product Category:** State-of-the-Art Report **Media:** Paperback **Price:** $75.00
Distribution Limitation: Unlimited **Classification:** Unclassified
Publication Date: August 1998 **Availability:** CBIAC
Description: This publication provides an assessment of 23 mathematical models that describe airflow, heat distribution, and contaminant transport within buildings. Each of the 23 models examined employed one of four approaches: well-mixed volume, computational fluid dynamics, plume dispersion, or empirical. Four models are recommended for further examination based on the needs of the Domestic Preparedness program. These were the U.S. EPA's RISK model, Battelle Memorial Institute's Emissions Transport Model, Gradient Corporation's Plume Dispersion Model, and the Subway Environmental Simulation developed by Parsons Brinkerhoff for the DOT. Descriptions and validation studies for these four models are presented.

CINC NBC Information Tool

CBIAC Product Number: SOAR-98-08 **Product Category:** State-of-the-Art Report **Media:** CD-ROM **Price:** $95.00
Distribution Limitation: Unlimited **Classification**: Unclassified
Publication Date: December 1997 **Availability:** CBIAC
Description: This CD-ROM (version 1.0) provides a complete set of NBC planning tools for use in high-level headquarters settings. Topics covered include agent characteristics, staff responsibility, the assessment tool, defense units, equipment, OPLAN, threat, and UJTL. The interactive nature of this tool greatly simplifies the NBC defense planning process at headquarters level. This CD-ROM would also be valuable to the domestic preparedness, force protection, and counter terrorism communities. This CD-ROM requires an Intel Pentium® or equivalent processor, a VGA or better display, and Microsoft Windows 95®.

Disaster Preparedness Operation Specialist (DPO) Computer Aided Instruction

CBIAC Product Number: SOAR-98-07 **Product Category:** State-of-the-Art Report **Media:** CD-ROM **Price:** $125.00
Distribution Limitation: Unlimited **Classification:** Unclassified
Publication Date: December 1997 **Availability**: CBIAC
Description: This 2 CD-ROM set (version 1.0) provides a multimedia supplement to the U.S. Navy's Disaster Preparedness Operation Specialist course. Topics covered include radiological detection equipment, dosimeters, computer indicator equipment, CBR protective equipment, self and buddy aid, chemical detection equipment, and chemical decontamination equipment. The presentations contain text, graphics, and video clips that support each of the topics. Because of the coverage of NBC operations in confined spaces, this set may also be of interest to the domestic preparedness community. This set requires an Intel Pentium® or equivalent processor, a VGA or better display, and Microsoft Windows 95®.

CBR-D Computer Aided Instruction

CBIAC Product Number: SOAR-98-06 **Product Category:** State-of-the-Art Report **Media:** CD-ROM **Price:** $125.00
Distribution Limitation: Unlimited **Classification:** Unclassified
Publication Date: December 1997 **Availability:** CBIAC

Description: This 2 CD-ROM set (version 1.0) provides a multimedia supplement to the U.S. Navy's CBR-D course. Topics covered include personal protective equipment, improved point detection system, chemical agent point detection system, chemical warfare directional detector, chemical agent detection kit and paper, collective protection system, chemical agent self and buddy aid, interim biological agent detection system, and RADIACs and radiation dosimeters. The presentations include text, graphics, and video clips that support each of the topics. Because of the coverage of NBC operations in confined spaces, this set may also be of interest to the domestic preparedness community. This set requires an Intel Pentium® or equivalent processor, a VGA or better display, and Microsoft Windows 95®.

State-of-the-Art Report on the Australia Group Chemicals

CBIAC Product Number: SOAR-98-04 **Product Category:** State-of-the-Art Report **Media:** Paperback **Price**: $75.00
Distribution Limitation: Unlimited **Classification:** Unclassified
Publication Date: June 1998 **Availability:** CBIAC

Description: This publication provides a condensed, quick reference summary of information on each of the 54 chemicals listed by the Australia Group. For each listed chemical, this report provides the chemical name, formula, structure, synonyms, trade names, Chemical Abstract Service number, CWC schedule number (where applicable), civilian uses, and the chemical warfareagents associated with the particular chemical (where applicable). The civilian uses provided represent examples of the industrial applications of dual use chemicals, and is not an exhaustive list.

CBIAC PRODUCT REQUEST FORM

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Critical Review of Surface Sampling Technologies for Volatilizing Liquid Chemical Agents	CR-98-05	$25.00		
Critical Review of Non-Lethal Grenade Technologies and Lethality Evaluation Criteria	CR-98-04	$25.00		
Technical Approach Options for Indoor Air Modeling	SOAR-98-09	$75.00		
CINC NBC Information Tool	SOAR-98-08	$95.00		
Disaster Preparedness Operation Specialist (DPO) Computer Aided Instruction	SOAR-98-07	$125.00		
CBR-D Computer Aided Instruction	SOAR-98-06	$125.00		
State-of-the-Art Report on the Australia Group Chemicals	SOAR-98-04	$75.00		

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